

CLAIM AMENDMENTS:

Claims 1 to 16 (cancelled)

17. (new) A method for operating an X-ray or neutron optical system, the system having an X-ray or a neutron source from which radiation is emitted as a primary beam, and impinges on a sample to be examined, and with an X-ray or neutron detector for detecting radiation refracted or scattered from the sample, wherein the source, the sample and the detector are substantially collinear to define a z-direction, wherein a beam stop is disposed between the sample and the detector, the beam stop having a cross-sectional shape, perpendicular to the z-direction, which is adapted to the cross-section of the primary beam, wherein the beam stop is disposed for displacement along the z-direction to optimize a ratio between a useful beam fraction and an interfering beam fraction impinging on the detector, the method comprising the step of:

adjusting the X-ray or neutron optical system to time changes in the properties of the beam prior to each measurement of the sample by automatically adjusting a position of the beam stop in the z-direction in such a fashion that, in a plane of the detector, a shadow cast by the beam stop precisely shields the primary beam and parasitic interfering radiation.

18. (new) The method of claim 17, wherein the parasitic interfering beam radiation includes radiation which is refracted from collimators and collimators associated with the source.

19. (new) The method of claim 17, wherein a position of the beam stop is also adjusted in an x-y plane, perpendicular to the z-direction.
20. (new) The method of claim 17, wherein the beam stop is motor driven for alignment in the z-direction.
21. (new) The method of claim 17, wherein the beam stop is configured as a permanent magnetic plate or with permanent magnetic elements, wherein a z-position of the beam stop is adjusted by means of the magnetic field of an electromagnetic coil.
22. (new) The method of claim 17, wherein a robust auxiliary detector, which is not damaged by direct influence of the primary beam, is utilized for alignment of the beam stop, wherein a second more sensitive detector is utilized for determination of the properties of the sample.
23. (new) The method of claim 17, wherein a beam intensity of the source is sufficiently reduced during an alignment measurement as to prevent damage to the detector.
24. (new) The method of claim 23, wherein an absorber is disposed in the primary beam to reduce the beam intensity.
25. (new) The method of claim 17, wherein adjustment of the X-ray or neutron optical system takes into consideration influences of

temperature changes and influences and/or degradations in beam optics.